

CALIFORNIA REGIONAL WATER QUALITY CONTROL BOARD
CENTRAL VALLEY REGION

ORDER NO.

WASTE DISCHARGE REQUIREMENTS

FOR

STATE OF CALIFORNIA, DEPARTMENT OF PARKS AND RECREATION
CALAVERAS BIG TREES STATE PARK
WASTEWATER TREATMENT FACILITY
CALAVERAS COUNTY

The California Regional Water Quality Control Board, Central Valley Region, (hereafter Regional Board) finds that:

1. On 22 April 2005, the State of California Department of Parks and Recreation (hereafter Discharger) submitted a Report of Waste Discharge (RWD) for updating Waste Discharge Requirements for its existing wastewater treatment facility (WWTF). Additional information was received on 16 September 2005, and 13 January and 16 February 2006. The WWTF treats and disposes of domestic wastewater generated from Calaveras Big Trees State Park.
2. Calaveras Big Trees State Park is located approximately three miles northeast of the town of Arnold, in Calaveras County. The WWTF is in Section 22, T5N, R15E, MDB&M (Assessors Parcel No. 025-005-026-000) as shown on Attachment A, which is attached hereto and made part of this Order by reference.
3. The term "WWTF" includes the effluent collection system, septic tanks, pump station, sprayfield, and leachfield disposal areas.
4. The Discharger is the owner and operator of the WWTF, and therefore is responsible for assuring that the design, operation, and maintenance of the entire collection, treatment, and disposal system satisfies the terms and conditions of this Order.
5. WDRs Order No. 98-045, adopted by the Regional Board on 27 February 1998, prescribes requirements for the Discharger's WWTF and is neither adequate nor consistent with the current plans and policies of the Regional Board.

Wastewater Treatment and Disposal Systems

6. There are eight separate wastewater treatment and disposal systems throughout the park, designated as North Grove, Oak Hollow, Mumbert House, Residence #1, Residences #2 through 5, Mobile Home Pad, Group Camp, and Shop Building.

North Grove

7. The North Grove WWTF consists of a collection system, 20,000-gallon septic tank, effluent conveyance system, leachfields, and spray irrigation field. The North Grove WWTF serves facilities within the North Grove Campground area, including the five restrooms within the campground; two restrooms within the day use areas; and restrooms at the visitor center, ranger office, park kiosk, Jack Knight Hall, and RV/trailer dump station.

8. The RWD provided information as to how much wastewater would be generated as a maximum gallon per day (gpd) basis. The Discharger assumed that approximately 300 campers and 500-day use visitors would use the North Grove facilities on a daily basis. Assuming that campers and day use visitors would generate approximately 15 and 5 gpd per person, respectively, the maximum amount of wastewater generated from the North Grove facilities would be approximately 7,000 gpd.
9. Domestic wastewater from the North Grove Campground area is conveyed to a 20,000-gallon septic tank via a gravity collection system. The collection system consists of approximately 3,400 lineal feet of six to eight inch diameter piping constructed of vitrified clay. Approximately 1,700 feet of the collection system has been slip-lined with polyethylene pipe.
10. The Discharger's RWD indicates that improvements will be made to portions of the collection system, including slip-lining portions of the sewer mainline from Highway 4 west to the 20,000 gallon septic tank, and removing and replacing portions of sewer mainline with PVC piping.
11. The 20,000 gallon septic tank is a dual chambered tank constructed of concrete. Both chambers capture and store solids while they undergo anaerobic decomposition. The heavier solids settle and form sludge at the bottom. The lighter solids, including fats and greases, rise to the surface and form a scum layer. The scum and sludge undergo decomposition and digestion, which both liquifies some solids (which are then discharged) and also produces carbon dioxide and methane gas, which are volatilized from the tank. Both the liquefaction and gasification processes reduce the solids volume in the tank and therefore reduce the frequency of septic tank cleaning.
12. The septic tank has two basic functions, waste treatment and solids storage, but it is essential to the long-term function of the leachfield disposal system that particulate (i.e., non-liquefied sludge) solids and scum be kept from exiting the tank. For this reason, the exit of the septic tank chamber draws from the tank below the scum and above the sludge, and it is imperative that regular inspections and cleanings assure that neither the sludge layer nor the scum layer increases to the extent that particulates are scoured and discharged from the tanks. The RWD states that the Discharger will install an effluent filter at the outlet port of the septic tank to capture any errant solids that may be present in the septic tank effluent.
13. Septic tank effluent is discharged into a concrete clear well that is equipped with gravity flow slide gates. The slide gates are manually adjusted to allow wastewater to flow to an existing leachfield via gravity, or to a pump station that currently conveys wastewater to an existing sprayfield and will also convey wastewater to the new proposed leachfield.
14. The clear well is not equipped with a flow meter to monitor flows discharged to the existing leachfield, sprayfield, or proposed new leachfield. This Order requires the Discharger to submit a report certifying that it has installed flow meters.
15. The existing leachfield is located within a cut on a steep hillside approximately 450 feet west of the septic tank. The leachfield has approximately 400 lineal feet of six-inch diameter perforated piping at a depth of approximately 16 inches below ground surface (bgs). Disposal trench dimensions range from 36 to 48 inches deep, and 48 inches wide. The Discharger did not provide any design

disposal rates for the existing leachfield, nor any information on percolation rates or depth to seasonal high groundwater.

16. The RWD indicates that until approximately two years ago, the leachfield had functioned properly for twenty plus years at an estimated flow rate of 7,000 gpd. However, the leachfield can no longer support these flows. Based on operational experience for the past two years, the Discharger estimates that the leachfield can dispose of approximately 3,000 gpd. Additionally, the RWD indicates that the Discharger wants to use the existing leachfield on an emergency basis. This Order limits the monthly average discharge to the existing leachfield to 3,000 gpd while the new leachfield is being constructed, and then allows its use on an emergency basis.
17. Because of performance issues with the existing leachfield system, the Discharger proposes to construct and utilize a new leachfield disposal system. Septic tank effluent contained in the clear well will be pumped to the new leachfield via a lift station and two-inch force main conveyance system. The lift station is equipped with with duplexed 7.5 horsepower submersible pumps. The pumps within the lift station are rated at 25 to 65 gallon per minute (gpm). The RWD indicates that the Discharger will throttle the pumps back to pump effluent to the leachfield at a rate of 55 gpm. There are no alarms on the lift station to notify park personal of potential problems, and therefore this Order requires that alarms be installed.
18. The new leachfield will consist of approximately 1,330 linear feet of leachline located in an area encompassing approximately 35,000 square feet, as shown on Attachment B, which is attached hereto and made part of this Order by reference. Disposal of wastewater to the new leachfield will occur via gravity and will be distributed evenly to three separate zones. Wastewater leachlines will be spaced approximately 10 feet apart. The disposal trenches will be approximately 24 inches wide by 45 inches deep with approximately 30 inches of drain rock and trench side wall below the leachline lateral. The Discharger has calculated that the new leachfield can dispose of approximately 19,900 gpd, which is three times more than the projected volume of wastewater from the North Grove facilities. The wastewater application rate is approximately 1.2 gpd per square foot of disposal trench, at design flow.
19. In September 2003, the Discharger dug profile trenches to a depth of five to six feet bgs, and conducted percolation testing within the new leachfield disposal area. Observations made from the profile trenches indicate that the soils within the leachfield disposal area consist primarily of silty sand with abundant gravel (approximately 50 to 66 percent). No groundwater was detected, nor was there any evidence of mottling within the profile trenches. Based on testing, percolation rates throughout the leachfield disposal area averaged approximately six inches per minute.
20. Monitoring of wastewater depth in disposal trenches can aid in estimating the condition of leachfields and in adjusting distribution of wastewater within the leachfield, and is key to determining when replacing a leachfield is necessary. Each individual leachfield lateral is required to have an inspection riser tube at each end to monitor the drainage capabilities of the disposal line.
21. Good practice requires that either an alternate leachfield of the same size be installed and alternately used or that sufficient area be set aside to replace the entire leachfield. The leachfield

has been designed such that there will be a one hundred percent replacement area leachfield, which is located downhill (southeast) of the proposed leachfield.

22. The Discharger has historically used a spray disposal field to dispose of wastewater during the dry weather months (i.e., May through September). The spray disposal field is located on a fairly steep hillside, and is approximately one-half acre in size and has eight irrigation riser pipes. The irrigation heads on the riser pipes are bubbler type heads. Wastewater discharged to the spray disposal field has not been disinfected prior to application.
23. The State Department of Health Services has expressed concerns about stormwater runoff from sprayfields to which undisinfected waste is applied. The Department indicates that viruses and other pathogens may survive in soil for years, and could be flushed into surface waters during rain events.
24. The Discharger has indicated that it is not able to make improvements (i.e., stormwater/tailwater control or disinfection) to the sprayfield at this time due to funding issues and that the sprayfields will be valved off and taken out of service. The Discharger states that if funding does become available, the sprayfield may be modified and be brought back into service. The Discharger must continue to use the spray disposal field until the new leachfield is constructed in 2006. However, this Order only allows the use of the spray disposal field beyond 1 October 2006 if the Discharger submits, and the Executive Officer approves, the report described in Provision H.1.e.

Oak Hollow Campground Facilities

25. Domestic wastewater generated within the Oak Hollow Campground facilities is treated and disposed of via four separate septic tank leachfield systems. The first system serves the camp host RV site and consists of a 1,000 gallon concrete septic tank, and approximately 100 feet of leachfield leachlines. This system is only used seasonally from approximately 1 May through 1 October of each year.
26. The second system within the Oak Hollow Campground serves domestic wastewater generated from Restroom # 9 in the southeastern portion of the campground. Restroom # 9 contains five toilets, seven sinks, and three showers. Wastewater from the facility is discharged into a 2,500 gallon septic tank located under the parking area of campsite #79. Septic tank effluent is discharged into a leachfield that has approximately 300 feet of leachlines.
27. The third system is located at Restroom #10. Restroom # 10 contains five toilets, four sinks, and four showers. Wastewater from the restroom is discharged into a 2,500 gallon septic tank and then to a leachfield that has approximately 300 feet of leachlines.
28. The last wastewater system in the Oak Hollow Campground is located at Restroom #11, which has three toilets and two sinks. Wastewater is discharged into a 1,250 gallon septic tank, and then into a leachfield which has approximately 200 feet of leachlines. A portion of the septic tank effluent conveyance piping is conveyed across a creek via aboveground piping that is attached to a bridge crossing.
29. The RWD did not provide any information as to whether the septic tank leachfield systems within the Oak Hollow Campground, or the other small wastewater systems described below, are fitted with effluent filters, whether the septic tanks are of single compartment or dual construction, the depth of leachlines, or percolation rates.

Mumbert House

30. The Mumbert House, which is near the southwestern border of Calaveras Big Trees State Park, is a seasonal residence for park personnel. The house has 3 bedrooms, one bathroom, and a kitchen. Wastewater generated from the house is discharged into a 500 gallon concrete septic tank. Septic tank effluent is discharged into a leachfield that has two, 100 foot leachlines. Each leachline has an inspection riser pipe to monitor wastewater within the disposal trenches.

Residence #1

31. Residence #1 is near the western boundary of the park. The residence is used on a seasonal basis by park personnel. The house has two bedrooms, one bathroom (one shower and one sink), and a kitchen (one sink). Wastewater generated from the house is discharged into a 1,000 gallon septic tank, with septic tank effluent being discharged to a leachfield containing approximately 200 feet of leachlines.

Residence #'s 2, 3, 4, and 5

32. Residence #'s 2, 3, 4, and 5, which are located west of Highway 4 near the park entrance, are used to house park personnel on a seasonal basis. Each house has two bedrooms, one bathroom, a kitchen, and a laundry room. Wastewater from all four residences is disposed of in a single onsite system, consisting of a common distribution box, a 2,500 gallon septic tank, and approximately 200 feet of leachlines. The leachfield disposal trenches are approximately 18 inches wide by 36 inches deep, with the leachline placed at approximately 18 inches bgs.

Mobile Home Pad

33. The mobile home pad, which is located west of Highway 4 and north of Residence #'s 2, 3, 4, and 5, is served by an onsite system consisting of a 1,000 gallon septic tank and two 100 foot leachlines. The leachline trenches are approximately 12 inches wide by 19 inches deep. The leachline is placed at approximately 15 inches bgs.

Group Camp

34. Wastewater generated at the Group Site Camp comes from Restroom #8, which has four showers, four sinks, and four toilets. The RWD did not provide any information on the size of the septic tank or leachfield.

Shop Building Area

35. The wastewater system serving the Building Shop Area disposes of wastewater generated from a Carpentry Shop and a travel trailer sewer connection. The Carpentry Shop has one toilet and one

sink inside the building. The travel trailer has one toilet, one shower, and two sinks. Wastewater generated from the shop and travel trailer are discharged into a wastewater conveyance system that transports wastewater to a 1,000 gallon dual compartment septic tank. From the septic tank, septic effluent is conveyed via a pipeline to a leachfield for disposal. The leachfield has four lateral leachlines which are each approximately 37 feet long.

Effluent Characteristics

36. The RWD provides limited information regarding the quality of the potable water provided to the park; however, the following table provides data for samples collected in 2005:

<u>Constituent</u>	<u>Units</u>	<u>Potable Water</u>
Calcium	mg/L	3.2
Chloride	mg/L	2.8
Hardness	mg/L	12
Magnesium	mg/L	<2
pH	units	7.2
Sodium	mg/L	2.6
Sulfate	mg/L	0.5
Total Dissolved Solids	mg/L	20
Total Nitrate as N	mg/L	<0.22

37. The Discharger's RWD states that it expects the characteristics of the effluent discharged into the leachfields to be typical of what is found in residential septic tank/leachfield systems. However, the characterization does not address typical waste constituents associated with travel trailer (RV) dischargers. The table below provides the expected septic tank effluent characteristic based on standard engineering references for residential septic tank/leachfield systems:

<u>Constituent</u>	<u>Units</u>	<u>Septic Tank Effluent</u>
pH	Standard Units	6.5-7.2
Total Dissolved Solids (TDS)	mg/l	230 ¹
Total Suspended Solids	mg/l	47-62
BOD ₅	mg/l	130-174
Total Coliform Organisms	MPN/100 ml	>2,400
Total Fecal Organisms	MPN/100 ml	>2,400
<u>Total Nitrogen</u>	mg/l	26-76

¹ Based on potable water TDS of 20 mg/L plus an incremental addition of 200 mg/L through water usage

38. The waste discharged into RV dump stations typically contains phenols, formaldehyde, zinc, and ammonia in addition to the constituents listed above.

39. The sample data indicate that the septic tanks provide primary treatment. Wastes that pass through the septic tanks are discharged to the soil underlying the leach lines; the soil then treats some of the remaining wastes. However, the amount of treatment depends on the waste type and concentrations, soil type and depth, percolation rates, wastewater application rates, and depth to groundwater. Under the best of circumstances, some waste constituents may migrate through the soil column to the underlying groundwater. The additional wastes found at RV dump stations may not be adequately treated in the soil column.
40. Acid and organic chemical solvent septic system additives typically contain halogenated and aromatic hydrocarbons that are highly mobile in soils and groundwater. The additives can impede effective treatment and pollute groundwater, and their use must be restricted as monitoring and cleanup can be costly.

Sanitary Sewer Overflows

41. A collection system “overflow” is a discharge to ground surface or to surface water from the effluent collection system at any point upstream of the septic tanks. Temporary storage or collection facilities may be utilized during maintenance operations and discharges to these facilities are not considered overflow events, provided that the waste is fully contained and properly disposed.
42. Potential causes of overflows within this system include grease blockages, root blockages, debris blockages, sewer line flood damage, air relief/vacuum valve failures, vandalism, storm or groundwater inflow/infiltration, lack of capacity, and contractor caused blockages.
43. Sanitary sewer overflows often contain high levels of suspended solids, pathogenic organisms, nutrients, oxygen demanding organic compounds, oil and grease, and other wastes. Sanitary sewer overflows can cause temporary exceedences of applicable water quality objectives, pose a threat to public health, adversely affect aquatic life, and impair the public recreational use and aesthetic enjoyment of surface waters in the area.
44. The Discharger is expected to take all necessary steps to adequately maintain and operate, and thereby prevent overflows from, its effluent collection system. A reasonable means to accomplish this is to prepare and implement an operation and maintenance manual that includes overflow prevention and response features.

Site Specific Conditions

45. The average annual rainfall for Calaveras Big Trees State Park is approximately 56 inches per year, with approximately 25 percent falling as snow.
46. All portions of the wastewater disposal areas (i.e, leachfield and sprayfields) are outside of the 100-year flood zone.
47. The land uses around the disposal areas are State Park property and forest preserve areas.
48. The existing leachfield, sprayfield, and proposed leachfield are within the South Fork Calaveras Hydrologic Area No. 533.30, as depicted on interagency hydrologic maps prepared by the Department of Water Resources in August 1986.

49. The Oak Hollow Campground, Mumbert House, and Residence #1 onsite septic tank leachfield systems are within the North Fork Stanislaus Hydrologic Area No. 534.50, as depicted on interagency hydrologic maps prepared by the Department of Water Resources in August 1986.
50. Soils within the proposed leachfield area are underlain by the Merhten Formation. The soils are brown to reddish silty loam soil with some clay and fine sand.
51. No information has been provided as to the depth of first encountered groundwater, or of groundwater quality, beneath the disposal sites.

Basin Plan, Beneficial Uses, and Regulatory Considerations

52. The *Water Quality Control Plan for the Sacramento River and San Joaquin River Basins, Fourth Edition*, (hereafter Basin Plan) designates beneficial uses, establishes water quality objectives, contains implementation plans and policies for protecting waters of the basin, and incorporates by reference plans and policies adopted by the State Water Resources Control Board. Pursuant to Section 13263(a) of the CWC, waste discharge requirements must implement the Basin Plan.
53. Surface water drainage from the existing leachfield, sprayfield, and proposed leachfield area is to San Antonio Creek, a tributary to South Fork of the Calaveras River which flows into New Hogan Reservoir.
54. Surface water drainage from the Oak Hollow Campground, Mumbert House and Residence #1 onsite septic tank leachfield areas is to the North Fork of the Stanislaus River, which flows to New Melones Reservoir.
55. The designated beneficial uses of the South Fork of the Calaveras River upstream of the New Hogan Reservoir are water contact recreation; non-contact water recreation; warm and cold freshwater habitat; migration of aquatic organisms; spawning, reproduction, and/or early development; and wildlife habitat.
56. The designated beneficial uses of the North Fork of the Stanislaus River upstream of the New Melones Reservoir are municipal and domestic supply; agricultural irrigation and stock watering; hydropower generation; water contact recreation; non-contact water recreation; warm and cold freshwater habitat; and wildlife habitat.
57. The designated beneficial uses of the underlying groundwater are municipal and domestic supply, agricultural supply, industrial service supply, and industrial process supply.
58. The Basin Plan establishes numerical and narrative water quality objectives for surface water and groundwater that waste discharge requirements must implement. To implement narrative water quality objectives, relevant water quality criteria and guidelines are to be considered on a case-by-case basis to determine the appropriate numerical limitation.
59. The Chemical Constituent objective in the Basin Plan requires, at a minimum, compliance with California maximum contaminant levels (MCLs) for waters designated as municipal supply. More

stringent criteria than MCLs are sometimes necessary to ensure that waters do not contain chemical constituents in concentrations that adversely affect beneficial uses.

60. The Basin Plan contains narrative water quality objectives for chemical constituents, tastes and odors, and toxicity. The toxicity objective requires that groundwater be maintained free of toxic substances in concentrations that produce detrimental physiological responses in humans, plants or animals associated with beneficial uses. The chemical constituent objective requires that groundwater shall not contain chemical constituents in concentrations that adversely affect beneficial uses. The tastes and odors objective requires that groundwater shall not contain taste or odor producing substances in concentrations that cause nuisance or adversely affect beneficial uses.
61. The Basin Plan allows the use of septic tank/leachfield systems where a conventional municipal sewage systems is not available provided construction guidelines referenced in the Basin Plan are met and provided a properly empowered entity assumes responsibility for the systems. This entity must assure proper operation and maintenance, and assure system replacement as necessary to preclude nuisance, pollution, and health impacts. In addition to the requirements of CWC section 13282, the Basin Plan requires that the public entity be empowered to finance its actions and empowered to issue permits, conduct monitoring and surveillance, and maintain control of pumping and disposal of septage, as well as to abandon properly, if necessary, any wastewater system. This Order requires that the State of California be empowered with these actions in relation to the wastewater systems within the Calaveras Big Trees State Park.

Groundwater Degradation

62. State Water Resources Control Board (State Board) Resolution No. 68-16 (“Policy with Respect to Maintaining High Quality Waters of the State”) (hereafter Resolution No. 68-16) requires a regional board in regulating the discharge of waste to maintain high quality waters of the state (i.e., background water quality) until it is demonstrated that any change in quality will be consistent with maximum benefit to the people of the State, will not unreasonably affect beneficial uses, and will not result in water quality less than as described in plans and policies (e.g. violation of any water quality objective). The discharge is required to meet waste discharge requirements that will result in the best practicable treatment or control of the discharge necessary to assure that pollution or nuisance will not occur and highest water quality consistent with maximum benefit to the people will be maintained.
63. Some degradation of groundwater in the leachfield areas is consistent with Resolution No. 68-16 provided that degradation:
 - a. is confined to a reasonable area;
 - b. is minimized by means of full implementation, regular maintenance, and optimal operation of best practicable treatment and control (BPTC) measures;
 - c. is limited to waste constituents typically encountered in domestic wastewater; and
 - d. does not result in water quality less than that prescribed in the applicable basin plan.

Antidegradation Analysis

64. The WWTF provides minimal treatment of wastewater and is highly dependent upon proper management and waste constituent attenuation in the disposal areas to prevent pollution of groundwater and to protect beneficial uses. While the Basin Plan conditionally allows septic tanks with leachfield systems for rural development, it includes the expectation of optimal site selection and conservative design which meets minimum guidelines, and attentive and judicious operation and maintenance. This Order requires the discharger to prevent pollution, nuisance, or contamination, and requires the discharger to appropriately operate and maintain the systems consistent with CWC section 13282. In addition, this Order include provisions to implement Resolution 68-16.
65. Waste constituents in effluent that represent the greatest risk of exceeding a water quality objective and may be used as indicator parameters regarding the performance of the WWTF are nitrogen and coliform. Both must be effectively attenuated within the soil to assure water quality objectives are met. The constraining water quality limit for nitrogen prescribed by the Basin Plan, pursuant to the chemical constituent objective, is the MCL for nitrate, which is equivalent to 10 mg/L when expressed as nitrogen. The Basin Plan numeric water quality objective for total coliform is less than 2.2 MPN/100 mL.
66. The expected effluent concentration for TDS is below 450 mg/L, the relevant numerical water quality limit used through Basin Plan procedures to apply the narrative water quality objective for chemical constituents that requires protection of agricultural supply, the beneficial use most sensitive to TDS. The individual salt components can safely be assumed to be proportionately low such that TDS can be an effective indicator parameter in their regulation. Restricting the use of water softeners should make these components unimportant in regulating water quality. The threat of toxic chemicals can reasonably be controlled through periodic education of park personnel and guests.
67. The incremental addition of dissolved salts though water usage (about 200 mg/L; Finding No. 37) is within the normal range for domestic use, and is reasonable considering modern water conservation practices. A TDS effluent limitation of 230 mg/L represents no cost or change in practice for the Discharger, and limits salt degradation to a reasonable amount while providing some protection of the groundwater beneath the leachfields.
68. Groundwater limitations equal to water quality objectives for indicator waste constituents and parameters are appropriate, as is a more restrictive TDS groundwater limitation, and consistent with maximum benefit to the people of the State for this WWTF. Accordingly, the discharge as authorized is consistent with the antidegradation provisions of Resolution 68-16.
69. No groundwater monitoring has been conducted at the designated disposal areas to determine compliance with Resolution No. 68-16. However, the Discharger submitted a *Groundwater Monitoring Well Installation Workplan* as part of the RWD. The Workplan will be reviewed and commented on separately from this Order.
70. In order to determine compliance with Resolution No. 68-16, it is appropriate to establish a schedule for installation and sampling of groundwater monitoring wells and formally determine background groundwater concentrations for selected constituents. If groundwater is degraded or there is evidence that the discharge may cause degradation, then the Discharger will be required to

evaluate and implement additional BPTC measures for each conveyance, treatment, storage, and disposal component of the system. Completion of these tasks will ensure that Best Practicable Treatment and Control (BPTC) and the highest water quality consistent with the maximum benefit to the people of the state will be achieved.

71. Section 13241 of the CWC requires that various factors, including economic considerations, be considered when adopting water quality objectives into a Basin Plan. Water Code Section 13263 requires that factors in Section 13241 be considered in adopting waste discharge requirements. The State Board has held that factors of section 13241 need not be specifically addressed when implementing existing water quality objectives in waste discharge requirements because the factors were already considered in adopting the objectives through amendments to the Basin Plan. Although there is no obvious cost to the TDS limitation, cost savings in the life of the leachfield and less degradation of groundwater should be realized. No additional analysis of Section 13241 factors is required.

Other

72. The State Water Resources Control Board adopted Order No. 97-03-DWQ (General Permit No. CAS000001) specifying waste discharge requirements for discharges of storm water associated with industrial activities, and requiring submittal of a Notice of Intent by all affected industrial dischargers. The collection system and leachfields are underground and are not exposed to stormwater runoff. Because there is no stormwater discharge, the Discharger is not required to obtain coverage under General Permit No. CAS000001.
73. The action to revise waste discharge requirements for the existing portions of this facility is exempt from the provisions of the California Environmental Quality Act (CEQA; Public Resources Code Section 21000 et. seq.) in accordance with Title 14, California Code of Regulations, Section 15301.
74. On 11 March 2005, the California State Department of Parks and Recreation filed a CEQA Notice of Exemption with the State Clearinghouse for the proposed improvements to the WWTF.
75. The projects, as approved by the California State Department of Parks and Recreation, may degrade water quality, possibly to the degree that water quality objectives will be violated, beneficial uses impacted, and pollution, contamination, or nuisance created. However, Discharge Prohibition A.7, Effluent Limitations C, Leachfield and Septic Tank Specifications E.6, Groundwater Limitations G, and Provisions H.1, H.4, H.6, and H.8, among others, should mitigate or avoid pollution, nuisance, contamination, exceedance of water quality objectives, and impacts on beneficial uses.
76. Section 13267(b) of the CWC provides that: "In conducting an investigation specified in subdivision (a), the regional board may require that any person who has discharged, discharges, or is suspected of having discharged or discharging, or who proposes to discharge waste within its region, or any citizen or domiciliary, or political agency or entity of this state who has discharged, discharges, or is suspected of having discharged or discharging, or who proposes to discharge, waste outside of its region that could affect the quality of waters within its region shall furnish, under penalty of perjury, technical or monitoring program reports which the regional board requires. The burden, including costs, of these reports shall bear a reasonable relationship to the need for the report and the benefits to be obtained from the reports. In requiring those reports, the regional board shall provide the person with a written explanation with regard to

the need for the reports, and shall identify the evidence that supports requiring that person to provide the reports.”

The technical reports required by this Order and the attached “Monitoring and Reporting Program No. ____” are necessary to assure compliance with these waste discharge requirements. The Discharger owns and operates the facilities that discharge waste subject to this Order.

77. The California Department of Water Resources sets standards for the construction and destruction of groundwater wells, as described in *California Well Standards Bulletin 74-90* (June 1991) and *Water Well Standards: State of California Bulletin 94-81* (December 1981). These standards, and any more stringent standards adopted by the state or county pursuant to CWC section 13801, apply to all monitoring wells.
78. State regulations that prescribe procedures for detecting and characterizing the impact of waste constituents from waste management units on groundwater are found in Title 27, CCR, section 20005, et seq. (hereafter Title 27). While the WWTF is exempt from Title 27, the data analysis methods of Title 27 may be appropriate for determining whether the discharge complies with the terms for protection of groundwater specified in this Order.
79. The discharge authorized herein and the treatment and storage facilities associated with the discharge, except for discharges to land of residual sludge and solid waste, are exempt from the requirements of Title 27. The exemption, pursuant to Title 27 section 20090(a), is based on the following:
 - a. The waste consists primarily of domestic sewage and treated effluent;
 - b. The waste discharge requirements are consistent with water quality objectives; and
 - c. The treatment and storage facilities described herein are comparable in function to a municipal wastewater treatment plant.
80. Pursuant to CWC section 13263(g), discharge is a privilege, not a right, and adoption of this Order does not create a vested right to continue the discharge.

Public Notice

81. All the above and the supplemental information and details in the attached Information Sheet, which is incorporated by reference herein, were considered in establishing the following conditions of discharge.
82. The Discharger and interested agencies and persons were notified of the intent to prescribe waste discharge requirements for this discharge, and provided an opportunity to submit written views and recommendations and to be heard in a public meeting.
83. In a public meeting, all comments pertaining to the discharge were heard and considered.

IT IS HEREBY ORDERED that Order No. 98-045 is rescinded and, pursuant to Sections 13263 and 13267 of the California Water Code, the State of California Department of Parks and Recreation, its

agents, successors, and assigns, in order to meet the provisions contained in Division 7 of the California Water Code and regulations adopted hereunder, shall comply with the following:

[Note: Other prohibitions, conditions, definitions, and some methods of determining compliance are contained in the attached "Standard Provisions and Reporting Requirements for Waste Discharge Requirements" dated 1 March 1991.]

A. Discharge Prohibitions

1. Discharge of wastes to surface waters or surface water drainage courses is prohibited.
2. Bypass or overflow of untreated or partially treated waste is prohibited.
3. Discharge of sewage from the sanitary sewer system at any point upstream of the designated disposal areas, including septic tanks, is prohibited. Discharge of treated wastewater outside of the leachfield disposal areas and spray irrigation areas is prohibited.
4. Surfacing of waste within or downgradient of the leachfields is prohibited.
5. After **1 October 2006**, discharge of effluent to the spray disposal field is prohibited unless the Discharger submits, and the Executive Officer approves, the report described by Provision No. H.1.e.
6. Discharge of waste classified as 'hazardous' under Title 23, CCR, Section 2521, or as 'designated' under of CWC section 13173 is prohibited, including any discharge of sludge.
7. The presence of leachate within one foot of the lowest finished leachfield grade is prohibited.

B. Discharge Specifications

1. The monthly average inflow to the existing leachfield shall not exceed 3,000 gpd. After **31 December 2006**, the existing leachfield shall only be used on an emergency basis.
2. The monthly average inflow to the new leachfield shall not exceed 19,000 gpd.
3. Disposal of effluent shall be confined to the designated leachfield areas and sprayfield as defined in the Findings of this Order.
4. The wastewater treatment and disposal areas shall not cause a condition of pollution or nuisance as defined by Section 13050 of the CWC.
5. Public contact with wastewater in the leachfield disposal areas and spray irrigation areas shall be precluded or controlled through such means as fences and signs, or acceptable alternatives.

6. No waste constituent shall be released or discharged, or placed where it will be released or discharged, in a concentration or in a mass that causes violation of the Groundwater Limitations.
7. Objectionable odor originating from the leachfield disposal and spray irrigation areas shall not be perceivable beyond the limits of the disposal areas.
8. As a means of determining compliance with Discharge Specification No. B.7, after 1 October 2006, any wastewater discharged to the sprayfield shall contain a dissolved oxygen content of at least 1.0 mg/l.
9. All treatment, storage, and disposal areas shall be designed, constructed, operated, and maintained to prevent inundation or washout due to floods with a 100-year return frequency.
10. The WWTF shall have sufficient treatment, storage, and disposal capacity to accommodate allowable wastewater flow, inflow and infiltration, and design seasonal precipitation during the winter months. Design seasonal precipitation shall be based on total annual precipitation using a return period of 100 years, distributed monthly in accordance with historical rainfall patterns.

C. Effluent Limitations

1. Effluent discharged to the North Grove leachfields and spray disposal field shall not exceed the following limits:

<u>Constituent</u>	<u>Units</u>	<u>Monthly Average</u>
Total Dissolved Solids	mg/L	230
Formaldehyde	mg/L	0.1 ¹
Ammonia	mg/L	1.5 ¹
Zinc	mg/L	2.1 ¹
Phenol	mg/L	2.1 ¹

¹Limits based on groundwater water quality objectives

2. Effluent discharged to leachfields or sprayfields shall not have a pH less than 6.5 or greater than 8.4.
3. After **1 October 2006**, effluent discharged to the sprayfields shall not exceed a monthly median of 23 MPN/100 ml and a daily maximum of 240 MPN/100ml for total coliform organisms.

D. Sprayfield Specifications

1. Application of effluent shall comply with the following setback requirements:

<u>Setback Definition</u> ¹	<u>Minimum Irrigation Setback (feet)</u>
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<u>Setback Definition</u> ¹	<u>Minimum Irrigation Setback (feet)</u>
Edge of spray disposal area to property boundary	50
Edge of spray disposal area to public road	50
Edge of spray disposal area to irrigation well	100
Edge of spray disposal area to domestic well	100
Edge of spray disposal area to manmade or natural surface water drainage course ²	50

¹ As defined by the wetted area produced during irrigation.

² Excluding ditches used exclusively for tailwater return.

2. Irrigation runoff (i.e., tailwater) shall be completely contained within the designated spray disposal area and shall not enter any surface water drainage course.
3. Irrigation of effluent shall not be performed within 24 hours of a forecasted storm, during a storm, within 24 hours after any measurable precipitation event, or when the ground is saturated.
4. Spray irrigation of effluent is prohibited when wind velocities exceed 30 mph.
5. The spray disposal area shall be managed to prevent breeding of mosquitoes. In particular:
 - a. There shall be no standing water 48 hours after irrigation ceases;
 - b. Tailwater ditches must be maintained essentially free of emergent, marginal, and floating vegetation, and;
 - c. Low-pressure and unpressurized pipelines and ditches accessible to mosquitoes shall not be used to store effluent.

E. Leachfield and Septic Tank Specifications

The Discharger shall complete the following actions regarding all septic tanks and leachfields:

1. Operate all systems and equipment to maximize treatment of wastewater and optimize the quality of the discharge. In particular, the Discharger shall comply with the following items, and shall describe their implementation in the Operation and Maintenance Plan required by the Provisions. The frequency of each task may be modified upon written request by the Discharger and written approval by the Executive Officer. The written request must clearly show that the reduction in frequency will not have the potential to impact water quality.
2. Inspect each septic tank at least annually.
3. Cut vegetation in the leachfield area as needed to prevent threat of root intrusion into the leachlines and drainage rocks, and remove the vegetative litter.

4. Annually evaluate whether wastewater is evenly distributed to all the disposal trenches and make modifications to the distribution system as necessary to optimize distribution and preclude the depth of wastewater in any disposal trench within 12 inches of the ground surface.
5. Annually inspect, and if necessary, clean the leachfields' distribution piping.
6. Properly maintain the septic tanks, including pumping a tank when any one of the following conditions exist, or can be reasonably projected to occur before the next inspection of a tank:
 - a. The combined thickness of sludge and scum exceeds one-third of the tank depth of the second compartment,
 - b. The scum layer is within three inches of the outlet device; or,
 - c. The sludge layer is within eight inches of the outlet device.
7. Promptly repair or replace septic tanks that are cracked or otherwise damaged.
8. Clean septic tank filters on a regular basis.
9. Maintain a 100-foot buffer zone between the nearest point of the leachfields to any year-round surface water course, spring, domestic well, and/or irrigation well. A 50-foot buffer zone shall be maintained between the nearest point of the leachfields and any seasonal drainage course.
10. Maintain a 50-foot buffer zone between the leachfields and the nearest property boundary.

F. General Solids Disposal Specifications

Sludge means the solid, semisolid, and liquid residues removed during the wastewater treatment processes.

1. Sludge shall be removed from septic tanks as needed to ensure optimal operation and optimal life of the leachfield disposal areas, but no less frequently than as specified in Leachfield and Septic Tank Specifications E.6.
2. Sludge that accumulates in the concrete clear well and distribution boxes shall be removed as needed to ensure the protection and optimal life of the WWTF.
3. Sludge removal shall be by a licensed liquid waste hauler and documented by copies of manifests.
4. Disposal of residual sludge and solid waste must be to a facility operated in accordance with valid waste discharge requirements issued by a regional water quality control board.

G. Groundwater Limitations

1. Release of waste constituents from the leachfields or sprayfield shall not cause groundwater, as determined by an approved monitoring well network, to:

- a. Contain any of the following constituents in concentrations greater than as listed:

<u>Constituent</u>	<u>Units</u>	<u>Limitation</u>
Total Coliform Organisms	MPN/100 mL	Less than 2.2
Total Dissolved Solids ^a	mg/L	230
Total Nitrogen	mg/L	10
Formaldehyde	mg/L	Non Detect
Ammonia	mg/L	Non Detect
Zinc	mg/L	Non Detect
<u>Phenol</u>	mg/L	Non Detect

^a A cumulative impact limit that accounts for several dissolved constituents

- b. Exhibit a pH of less than 6.5 or greater than 8.4 pH units.
 - c. Impart taste, odor, toxicity, or color that creates nuisance or impairs any beneficial use.

H. Provisions

1. All of the following reports shall be submitted pursuant to Section 13267 of the California Water Code and shall be prepared by a registered professional as described by Provision H.3.
 - a. By **25 May 2006**, the Discharger shall submit and implement a spray irrigation management plan for the sprayfield. At a minimum, the plan shall explain how the sprayfield will be managed to prevent runoff into surface water drainages and/or into the buffer areas. To do so, the plan shall (1) describe how vegetation will be managed within the sprayfield such that spray irrigation sprinklers and piping can be inspected and maintained to prevent tailwater runoff; (2) show the locations and boundaries of the sprayfield, locations of all sprinkler lines and sprinkler heads, setbacks from property boundaries, surface water bodies and drainages; and (3) explain the methods for turning on and off the spray irrigation system.
 - b. By **1 July 2006**, the Discharger shall submit a report certifying that it has installed a device to accurately monitor wastewater flows being discharged to the existing North Grove leachfield. The report shall provide a description of the type of flow metering device that was installed and show that it has been calibrated.
 - c. By **15 August 2006**, the Discharger shall submit and implement an *Operation and Maintenance (O&M) Plan* for the WWTF within Calaveras Big Trees State Park. The O&M Plan shall instruct field personnel on how to manage the day-to-day discharge operations to comply with the terms and conditions of this Order and how to make field adjustments, as necessary, to optimize the effectiveness and life of the leachfields and

preclude nuisance conditions (e.g., surfacing wastewater). It shall also include a troubleshooting flowchart with recommend remedial actions and a description of notification requirements. The O&M Plan shall address management of the WWTF in sufficient detail to optimize compliance with this Order, and most particularly Leachfield and Septic Tank Discharge Specifications E.4 and E.6, including the following:

- i. An inspection procedure for checking the integrity of septic tanks.
- ii. A description of the type, location, and procedure for calibration of the flow meter(s) installed to comply with the Monitoring and Reporting Program.
- iii. The procedures to be implemented to assure that wastewater is evenly distributed within the disposal trenches and wastewater will not be disposed of when the depth of wastewater in any trench is within 12 inches of the ground surface.

The Discharger shall ensure that an up-to-date O&M Plan is readily available to operating personnel at all times, and that personnel are familiar with it

- d. By **15 August 2006**, the Discharger shall submit an *Effluent Collection System Operation, Maintenance, Overflow Prevention, and Response Plan* (ECS Plan) that describes the actions designed to prevent or minimize the potential for collection system overflows. The Discharger shall maintain the ECS Plan in an up-to-date condition and shall amend the ECS Plan whenever there is a change (e.g., in the design, construction, operation, or maintenance of the effluent collection system) that materially affects the potential for overflows, or whenever there is an overflow. The Discharger shall ensure that the up-to-date ECS Plan is readily available to operating personnel at all times and that the personnel are familiar with it.
 - i. At a minimum, the operation and maintenance portion of the ECS Plan shall contain or describe the following:
 - 1. Detailed maps of the effluent collection system, identifying locations of cleanouts and air relief valves;
 - 2. A detailed listing of elements to be inspected, a description of inspection procedures and inspection frequency, and sample inspection forms;
 - 3. A schedule for routine inspection of all pipelines, valves, and other key system components. The inspection/testing program shall be designed to reveal problems that might lead to accidental spills and ensure that preventive maintenance is completed;
 - 4. Provisions for repair or replacement of defective equipment.
 - ii. At a minimum, the overflow prevention and response portion of the ECS Plan shall contain or describe the following:
 - 1. Identification of areas of the collection system that historically have overflowed and an evaluation of the cause of the overflow;

2. Maintenance activities that can be implemented to address the cause of the overflow and means to prevent future overflows;
 3. Procedures for responding to overflows designed to minimize the volume of overflow that enters surface waters, and minimize the adverse effects of overflows on water quality and beneficial uses; and
 4. Steps to be taken when an overflow or spill occurs, and procedures that will be implemented to ensure that all overflows and spills are properly identified, responded to and reported to appropriate agencies, and if necessary, the public.
- e. **After 1 October 2005, and at least 90 days prior** to any further use of the sprayfield, the Discharger shall submit a report describing and certifying that (a) a wastewater disinfection system has been constructed, is capable of meeting effluent limits prescribed by this Order, and is fully operational, and (b) all of the setback requirements prescribed in Sprayfield Area Specifications have been met. In addition, the Discharger shall propose a reasonable flow limit based on hydraulic, infiltration, and evapotranspiration rates. Finally, the Discharger shall submit a groundwater well installation workplan for characterization of groundwater quality at the sprayfield. The workplan shall describe the installation of sufficient monitoring wells to allow evaluation of the groundwater quality upgradient and down gradient of the sprayfield. Every monitoring well shall be constructed to yield representative samples from the uppermost layer of the uppermost aquifer and to comply with applicable well standards. The workplan shall be consistent with, and include the items listed in, the first section of Attachment C, *“Items to be Included in a Monitoring Well Installation Workplan and a Monitoring Well Installation Report of Results.”* As described in the Prohibitions, written approval by the Executive Officer is required prior to re-initiating discharge to the sprayfield.
- f. **By 31 December 2006**, the Discharger shall submit a report certifying that it has installed a flow meter capable of monitoring flows discharged to the sprayfield and new proposed leachfield. The report shall provide a description of the type of flow meter that was installed and show that it has been calibrated.
- g. **By 31 December 2006**, the Discharger shall submit a groundwater well installation report showing that it has installed monitoring wells at the new leachfield per an approved Groundwater Monitoring Well Installation Workplan. The well installation report shall be consistent with, and include the items listed in, the second section of Attachment C. The report shall describe the installation and development of the monitoring wells around the the new leachfield and explain any deviation from the approved workplan.
- h. **By 31 December 2006**, the Discharger shall submit a report certifying that the new wastewater conveyance and leachfield system have been constructed in accordance with this Order, and that an alarm system has been added to the lift station.
- i. **By 31 December 2006**, the Discharger shall submit a report certifying that an effluent filter has been installed on the outlet port of the septic tank, and that the repairs to the collection system, as described in Finding No. 10, have been completed. The report

shall (1) describe the type of effluent filter, and (2) provide a map showing those areas of the collection system that were either slipped lined or for which piping was replaced.

- j. By **1 July 2009**, the Discharger shall submit a *Background Groundwater Quality Study Report*. For each groundwater monitoring parameter/constituent identified in the MRP, the report shall present a summary of monitoring data, calculation of the concentration in background monitoring wells, and comparison of background groundwater quality to that in wells used to monitor the facility. Determination of background quality shall be made using the methods described in Title 27, Section 20415(e)(10), and shall be based on data from at least eight consecutive quarterly (or more frequent) groundwater monitoring events. For each monitoring parameter/constituent, the report shall compare measured concentrations for compliance monitoring wells with: 1) the calculated background concentration, and 2) the interim numeric limitations set forth in Groundwater Limitation G.1.a. Where background concentrations are statistically greater than the interim limitations specified in Groundwater Limitation G.1.a, the report shall recommend final groundwater limitations for waste constituents listed therein. Subsequent use of a concentration as a final groundwater limitation will be subject to the discretion of the Executive Officer.
2. Upon completion of tasks set forth in Provision H.1, the Regional Board may consider the evidence provided and make a determination regarding whether the Discharger has justified continued discharge from the WWTF as consistent with water quality policies and plans and the CWC or whether substantial evidence indicates continued discharge should not be permitted due to violated water quality objectives, impaired beneficial uses, pollution, nuisance or contamination, or unreasonable degradation.
3. In accordance with California Business and Professions Code sections 6735, 7835, and 7835.1, engineering and geologic evaluations and judgments shall be performed by or under the direction of registered professionals competent and proficient in the fields pertinent to the required activities. All technical reports specified herein that contain workplans for, that describe the conduct of investigations and studies, or that contain technical conclusions and recommendations concerning engineering and geology shall be prepared by or under the direction of appropriately qualified professional(s), even if not explicitly stated. Each technical report submitted by the Discharger shall contain the professional's signature and/or stamp of the seal.
4. The Discharger shall comply with the Monitoring and Reporting Program No. _____, which is part of this Order, and any revisions thereto as ordered by the Executive Officer.
5. The Discharger shall comply with the "Standard Provisions and Reporting Requirements for Waste Discharge Requirements", dated 1 March 1991, which are attached hereto and made part of this Order by reference. This attachment and its individual paragraphs are commonly referenced as "Standard Provision(s)."
6. The Discharger shall use the best practicable treatment and control techniques, including proper operation and maintenance, to assure compliance with terms of this Order.

7. In event of overflow from the effluent collection system, the Discharger shall take all necessary remedial action to control and limit the volume of sewage discharged, and terminate the overflow as rapidly as possible. Necessary remedial actions may include, but are not limited to, the following:
 - a. Interception and rerouting of sewage flows around the collection line failure;
 - b. Vacuum truck recovery to the extent practical of sanitary sewer overflows and wash down water;
 - c. Use of portable aerators in surface waters where complete recovery of the spilled sewage is not feasible and severe oxygen depletion is expected;
 - d. Cleanup of sewage-related debris at the overflow site; and
 - e. Disinfection and posting of the area.
8. The Discharger shall report to the Regional Board any toxic chemical release data it reports to the State Emergency Response Commission within 15 days of reporting the data to the Commission pursuant to section 313 of the "Emergency Planning and Community Right to Know Act of 1986."
9. The Discharger shall not allow waste-free wastewater to be discharged into the wastewater collection, treatment, and disposal system. Waste-free wastewater means rainfall (roof gutters, yard drainage), groundwater, cooling waters, and condensates that are essentially free of wastes.
10. The Discharger shall submit to the Regional Board on or before each compliance report due date, the specified document or, if appropriate, a written report detailing compliance or noncompliance with the specific schedule date and task. If noncompliance is being reported, then the Discharge shall state the reasons for such noncompliance and provide an estimate of the date when the Discharger will be in compliance. The Discharger shall notify the Regional Board in writing when it returns to compliance with the time schedule.
11. In the event of any change in control or ownership of the facility or wastewater disposal areas, the Discharger must notify the succeeding owner or operator of the existence of this Order by letter, a copy of which shall be immediately forwarded to this office. To assume operation as Discharger under this Order, the succeeding owner or operator must apply in writing to the Executive Officer requesting transfer of the Order. The request must contain the requesting entity's full legal name, the state of incorporation if a corporation, the name and address and telephone number of the persons responsible for contact with the Regional Board, and a statement. The statement shall comply with the signatory paragraph of Standard Provision B.3 and state that the new owner or operator assumes full responsibility for compliance with this Order. Failure to submit the request shall be considered a discharge without requirements, a violation of the California Water Code. Transfer shall be approved or disapproved by the Executive Officer.

12. The Discharger must comply with all conditions of this Order, including timely submittal of technical and monitoring reports as directed by the Executive Officer. Violations may result in enforcement action, including Regional Board or court orders requiring corrective action or imposing civil monetary liability, or in revision or recession of this Order.
13. When it appears that any leachfield within the system is showing signs of failure (sustained wastewater in disposal trenches at or near the maximum design depth), then the Discharger shall increase the frequency of observation well monitoring and shall initiate construction of the replacement community leachfield when this condition cannot be mitigated by distribution system adjustments and the surfacing of effluent will be otherwise unavoidable.
14. A copy of this Order shall be kept at the WWTF for reference by operating personnel. Key operating personnel shall be familiar with its contents.
15. The Regional Board will review this Order periodically and will revise requirements when necessary.

I, PAMELA C. CREEDON, Executive Officer, do hereby certify the foregoing is a full, true, and correct copy of an Order adopted by the California Regional Water Quality Control Board, Central Valley Region, on _____.

PAMELA C. CREEDON, Executive Officer